

# Medical Threat Assessment

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# Objectives

- Understand the concept of “Medical Threat”
- Be exposed to the techniques and resources of Medical Threat Assessment (MTA)
- Understand who needs to know the MTA

# Medical Threat

- The sum of potential actions / conditions / infections / events that could reduce the ability of a unit to accomplish its mission

# Medical Threat

- Battle Injuries
  - What everyone thinks of!
  - Historically, NOT the major player!!
  - Paid political announcement of PM

# Medical Threat

- Battle Injuries
- Non-battle Injuries
- Environmental Injuries
- Psychological Stress
- Infectious Disease

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# Medical Threat Assessment

- Battle Injury estimation very important but not a medical responsibility
- MTA = DNBI Assessment
- W, W, W, W, W

# Population at Risk

- MTA are 'Population Medicine'
  - MTA generated for a large group
  - Subgroups have different
- Populations at risk may not always be obvious

# Population at Risk

- Number
- Demographics
- Health Status
- Stress
- Training
- Equipment
- Activity



# Non-Battle Injuries

- Transportation
- Construction
- Unintended fires / explosions
- Sports

# Environmental Injuries

- Non-Living
  - Topographic
  - Energy exchange
  - Particulate
  - Pollution
- Living
  - Flora
  - Fauna

# Environmental Injuries

- Non-Living
  - LAT / LONG
  - Development
  - Terrain
  - Climate
  - Biomass
  - Shelter / Enclosures

# Environmental Injuries

- Immediate effects
- Delayed effects
- Really, really delayed effects

# Psychological Stress

- Easily underestimated
- Can't be simulated
- All sorts of Sx
- Acute and delayed effects

# Infectious Disease

- Arthropod-borne
- Fecal-Oral
- Respiratory
- Close personal contact
- Really close personal contact

# Sources of MTA Information

- AFMIC (DIA)
  - <http://mic.afmic.detrick.army.mil/>
  - MEDIC CD
  - Disease and Environmental Alert Reports (DEARS)
  - Classified and non-classified information

# Sources of MTA Information

- Army Medical Surveillance Activity
  - [http://amsa.army.mil/AMSA/amsa\\_home.htm](http://amsa.army.mil/AMSA/amsa_home.htm)
  - Deployment instructions, forms, and links
  - Surveillance data, can be cut by many variables



# Sources of MTA Information

- Navy Environmental Health Center
  - <http://www-nehc.med.navy.mil/>
  - Disease Risk Assessment (DISRAP)
  - Surveillance data

# Sources of MTA Information

- World Health Organization
  - <http://www.who.int/en/>
  - Weekly Epidemiologic Record

# Sources of MTA Information

- Centers for Disease Control and Prevention (CDC)
  - <http://www.cdc.gov/travel/index.htm>
  - Health Information for the International Traveler (aka 'The Yellow Book')

# Sources of MTA Information

- State Department
  - <http://www.state.gov/>
  - Travel Advisories
  - Country snapshots

# Sources of MTA Information

- National Library of Medicine
  - <http://www.nlm.nih.gov/>
- USUHS LRC
  - MEDLINE, other searches

# Sources of MTA Information

- FM 8-33. Communicable Diseases in Man
- FM 21-10. Field Hygiene and Sanitation (or service equivalent)
- Current ACIP Recommendations (CDC)

# Factors Affecting MTA Information

- Under reporting, poor reporting
- Biases
- Politics
- Biology of indigenous populations

# MTA Information

- An absence of reporting  $\neq$  absence of risk
- Use many sources
- Use feet on the ground



# MTA Information

- A painstakingly thorough list of all possible medical threats is necessary
- And worthless to military leaders

# MTA Brief

- Anyone can collect the information
- You have to synthesize, distill, & prioritize
- For many audiences

# MTA Brief Matrix

High M / M

Low M / M

High Risk

**1**

2

Low Risk

2

4

# MTA Brief

- Short Incubation
  - Acute Gastroenteritides (AGE)
  - Some Respiratory (URI)
  - Sexually Transmitted Illnesses (STI)
  - Some Arthropod-borne Dz
  - Injuries

# MTA Brief

- Longer Incubation
  - Some Respiratory (URI)
  - Sexually Transmitted Illnesses (STI)
  - Some Arthropod-borne Dz
  - Some GI Dz, esp Hepatidites

# MTA Format

- Define PAR and Site
- Languages
- Climate
- Jet Lag
- Stress
- Water & Food

# MTA Format

- Local Electricity
- Host Medical Facilities
- Military Medical Facilities
- Animal\* / Plants
- Misc info (e.g., earthquakes, etc.)
- Personal Hygiene
- Safety Issues

# MTA Format

- Injuries of Operational Importance
  - By phase of operation
  - By type of mission
- Diseases of Operational Importance
  - Brief Incubation
  - Longer Incubation



# MTA Format

- Bring it home with MTA MATRIX
- Countermeasures with source and cost

# MTA Audiences

- Commanders
- Medical Officers
- Troops

# Commanders

- Responsibilities
  - Accomplish mission
  - Safety of subordinates
- Need to know the 'Bang for the Buck' answers
- Will ask for the rest if necessary
- Assimilate data well
- Avoid medical jargon

# Medical Types

- Need to be able to adapt their thought processes to new threats
- Fever and HA in February in Watertown, NY is probably the flu...
- MUST buy into Surveillance

# Troops

- Are frightened and anxious
- Are not medically sophisticated
- Are often not highly educated
- Often are '18 & Invincible'

# Medical Threat Assessment

- Not a static document
- Needs continual assessment & revision before, during, and after deployment
- Assessment requires  
SURVEILLANCE

# Medical Threat Assessment

- May be one of the most important jobs you ever do
- May or may not be in your future
- Prepare now as if it is and thousands of lives depend on it!